

# PULP & PAPER OPERATOR

## Occupational Profile

The PULP & PAPER OPERATOR observes, monitors, and supports the process of pulp and paper making. They possess the skills for a multi-faceted production environment, such as troubleshooting, cleaning, safety, teamwork, understanding systems, basic computer skills, communication, and quality assurance.



DUTIES ↓

TASKS →

<b>EVALUATE JOB SAFETY.</b>	<b>A</b>	Participate in safety training (e.g., hearing, fire, bloodborne pathogens, etc.). A-1	Identify and wear proper personal protective equipment. A-2	Document job safety hazards. A-3	Inspect mobile equipment (e.g., cranes, fork lifts, aerial lifts, etc.). A-4	Enter information into Incident Reporting System (e.g., near-miss, injuries, fire, spills, damage, hazard alert). A-5	Conduct safety observations of other employees. A-6	Perform lockouts. A-7	Perform confined space entry. A-8
		<b>PERFORM PULPING OPERATION DUTIES.</b>	<b>B</b>	Perform general housekeeping (e.g., hosing, shoveling, raking, sweeping, blowing down, etc.). B-1	Conduct equipment observation rounds (e.g., leaks, overheating equipment, excessive vibration, unusual noise, etc.). B-2	Troubleshoot process failures/anomalies. B-3	Change process settings (e.g., water flow, valve adjustments). B-4	Inspect and clean and/or replace filters (e.g., water, oil, acid, chlorate, etc.). B-5	Perform shut-down procedures. B-6
		Conduct pulp testing (e.g., bleach testing, kappa, brightness, dirt count, pH, moisture, etc.). B-9		Identify and sort wood species (e.g., logs and chips). B-10	Load drum with logs. B-11	Monitor the de-barking process. B-12	Load grinders with wood. B-13	Unplug jammed lines and pipes (e.g., plugged lines, and stove pipes). B-14	Perform chemical unloading (e.g., confirm chemical, check tank levels, unlock unloading point, etc.). B-15
<b>PERFORM PAPER MAKING OPERATION DUTIES.</b>	<b>C</b>	Perform general housekeeping (e.g., sweeping, shoveling, cleaning up “broke,” raking, etc.). C-1	Conduct paper testing (e.g., tear, burst, color, wet strength, etc.). C-2	Prepare wet end chemicals. C-3	Conduct wet end testing (e.g., pH, consistencies, brightness, charge, freeness, etc.). C-4	Inspect, clean, and/or replace filters (e.g., water, oil, starches/chemical filters). C-5	Unloading trucks and rail cars. C-6	Pulping bales and broke rolls. C-7	Operate overhead crane. C-8
				Cut paper cores. C-9	Change winder set (e.g., adjusting blade width, loading core on winder, threading paper, etc.). C-10	Carry out roll handling process (e.g., wrapping, labeling, data entry, unloading winder, etc.). C-11	Perform machine break responsibilities (e.g., operate air hoses or water hoses, threading, etc.). C-12	Install paper machine clothing. C-13	Loading trucks and rail cars. C-14
<b>PERFORM POWER OPERATION DUTIES.</b>	<b>D</b>	Perform general housekeeping (e.g., sweeping, etc.). D-1	Maintain boiler operations (e.g., blowing down boiler, unplug chutes, shovel ash, etc.). D-2	Conduct equipment observation rounds (e.g., leaks, overheating equipment, vibrating equipment, unusual noise). D-3	Sample and test liquor (boiler fuel). D-4	Conduct testing to verify online sensors (e.g., conductivity). D-5	Perform start-up procedures for boiler/turbine. D-6	Perform shut-down procedures for boiler/turbine. D-7	Clean water intake racks. D-8
<b>MANAGE ENVIRONMENTAL ASPECTS.</b>	<b>E</b>	Report environmental anomalies to supervisor. E-1	Perform effluent testing (e.g., pH, solids, consistency, capacity). E-2	Manage water use. E-3	Reduce solid waste. E-4				

## Tools, Equipment, Supplies, & Materials

- Pickeroon
- Flashlight
- Sledgehammer
- pH meter
- Wet lab
- Process lab (pumps, valves, etc.)
- Paper hound/plow
- Wheel wrench
- Valve cheaters
- Air hoses
- High pressure water tools
- Paper quality test equipment
- Chain saw
- Camera systems

## Emerging Issues & Future Trends

- Entry-level may need more advanced training
- Mobile computing
  - Tablets in the field
- Bio refineries
- Operators are going to have more responsibilities
- Aging workforce
- Critical thinking/problem-solving/troubleshooting
- More self-management



## General Knowledge

- Industrial safety
- Communication skills
- Types of pumps
- Knowledge of valves
- Basic understanding of hazcom
- Ability to read MSDS
- Hazmat
- TAPPI/NARI
- Work ethic
- Multi-tasking
- Basic math skills
- Basic lab skills
- Basic chemistry skills
- Ability to read a tape measure
- Behavioral safety process
- Understand process control
- Ability to work independently
- Interpreting process diagrams
- Basic understanding of mechanical equipment
- Powered industrial truck (PIT) (e.g., fork lift)
- General knowledge of pneumatics and hydraulics
- Problem solving/process troubleshooting/critical thinking
- Computer literacy (basic)
  - DCS (knowledge of DCS)
  - Microsoft Office (Word, Excel, PowerPoint)
  - SAP
- Understand concepts of pressure/steam
- Knowing common environmental aspects of mills (e.g., noise, hazardous waste, solid waste, air effluent)
- Basic understanding of common OSHA-mandated safety modules
- Understand wet end operations
- Understanding of environmental stewardship
- General understanding of regulatory agencies/requirements (e.g., EPA, ME DEP, etc.)
- Licensing (boiler, wastewater, hazmat)

## Critical Process Lab Elements

- Fundamental sensors
- Level
- Temperature
- Pressure
- Flow
- Simple pump loop with control valves
- Consistency sensor
- Small PLC (Programmable Logic Controllers)
- Various types of valves
- Various types of pumps (show and tell or from a mill)

## Participants

Dean Dolham, Production Engineer, Sappi Somerset  
 Vickie Gammon, Career Development Coordinator, Verso Paper Androscoggin Mill  
 Michael Geroux, Mechanical Maintenance Supervisor, Old Town Fuel and Fiber  
 Jim Nicholson, Safety Manager, Great Northern Paper  
 Robert Smart, Backtender - Tissue, Lincoln Paper & Tissue  
 Mike Vashon, Process Engineer/Quality Manager, UPM Madison  
 Mike Ventrella, Senior Process Manager, Verso Paper Androscoggin Mill

## Host College

Kennebec Valley Community College  
 Fairfield, Maine

Date: September 27, 2013

## Co-facilitators/Coordinators:

Dr. Jeremy Pickard, Associate Director,  
 Advanced Technology Environmental and Energy Center at  
 Eastern Iowa Community Colleges

Sarah Gross, Program Coordinator and Environmental Analyst  
 National Partnership for Environmental Technology Education